

THE DENTAL PRACTITIONER

monthly journal for the Practitioner and his Staff

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SEPTEMBER, 1951

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The Dental Laboratories Section of the Surgical Instrument Manufacturers' Association]

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THE DENTAL PRACTITIONER

A Monthly Journal for the Practitioner and his Staff
(Incorporating the Proceedings of the British Society of Periodontology)

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Associate Editors :

H. MANDIWALL,
M.B., B.S., L.D.S.

N. LIVINGSTONE WARD,
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THE DENTAL PRACTITIONER

A Monthly Journal for the Practitioner and his Staff

Vol. II, No. 1

September, 1951



EDITORIAL

WE ARE ONE

THIS number marks the commencement of our second year, and looking back we feel that we have much to be proud about and even more for which to be thankful. The staffs of the various Dental Schools throughout the country have been most co-operative in supplying us with first-class material, and you, our readers, have by no means been backward in writing letters, entering into controversy where such controversy was of help to us all, and in sending hints, articles, and case-histories.

During this our second year we shall strive to maintain the standard we have so far achieved, and wherever possible to improve it. We have many interesting numbers already organized and others promised. It would be unfair to the authors and organizations concerned, however, to give you too much advance news, but we are sure that when you receive each issue you will be pleased with the contents.

We hope, now that we have reached our first birthday, that many others of you will join in the celebrations by giving us your comments, and by offering us articles, etc. The more mail we receive the better we like it, and a special word goes out to those of our colleagues in Norway, Sweden, France, Australia, New Zealand, Canada, U.S.A., South

Africa, and Ireland. We have already made firm friends in each of these countries, and we would like to make more. We are one in more respects than our age, for ours is a very united profession and we here in Britain wish to foster this spirit of unity with our colleagues all over the world. So let us hear from as many of you as possible.

SEARCH AND RESEARCH

In this number readers will find that we have published the first part of a paper by Mr. J. J. Hodson, L.D.S., of Sheffield University, dealing with up-to-the-minute research work. This is the first time that the DENTAL PRACTITIONER has published such an article, and after reading it we feel sure that you will all agree that it should not be the last. This paper was read at a meeting of practitioners, when it was stressed how important a part the general dental practitioner can play in clinical research and in correlating laboratory findings with clinical observations in practice.

It is obvious from Mr. Hodson's paper that new techniques and approaches to dental problems will increase our knowledge of the dental tissues and thus enable further progress to be made in the elucidation of the problems of their pathology.

Particular points of interest are that the micro-dissection techniques used in these investigations are the first to be developed in this country, and also that while this paper was in the press a consultant symposium on enamel lamellæ was published in America which demonstrated a considerable divergence of opinion by the leading authorities and

suggested that there was a definite need for further research.

We should like to congratulate Mr. Hodson and his colleagues in the dental pathology department at Sheffield University for the excellent work they have done, and we are proud to feel that our workers are so far advanced in the field of research.

A CASE OF MULTIPLICATED DENS IN DENTE

By E. J. PERINT, M.D., D.D.S. Hungary, L.D.S. R.C.S. Eng.

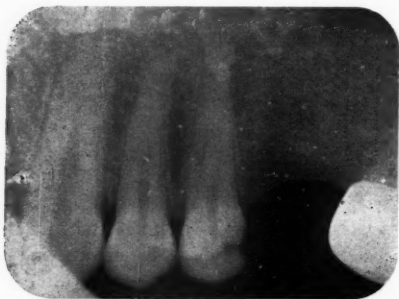
THE patient, a male, aged 34, had been complaining of pain in the upper left second molar. The character of the pain was similar to that

years previously, the mandibular right first molar. The patient also told me that very similar pains did occur in other teeth but



caused by an acute pulpitis. The patient explained that he had lost many of his teeth

the symptoms were milder in character and ceased on their own accord.



I examined the patient's teeth radiologically with special regard to the tooth that was causing pain. In the pulp-chamber of the upper left second molar a circumscribed calcified mass could be detected, which resembled a little tooth. The greater radiolucency of the enamel in the crown of the little tooth was very marked (dens in dente). After the extraction the tooth was sawed in half at the midline and a fully-formed little tooth was found in the pulp-chamber.

after similar symptoms because any attempted root treatment resulted in failure, inasmuch as it was impossible to extirpate the pulps from his teeth. Thus he had the first maxillary molar on the same side extracted last year and, a few

Further radiological examination of the other teeth revealed denticles in the right upper maxillary molar and left mandibular second premolar. Marked calcification in the pulp-chamber of the maxillary left first and second premolars was also observed.

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A NEW PRESENTATION OF SOME COMMON FEATURES OF THE STRUCTURE OF HUMAN ENAMEL*

By J. J. HODSON, L.D.S. R.C.S. Edin., B.D.S. Sheff.

Department of Oral Pathology, Sheffield University

IN choosing this subject I thought you might be interested in seeing some of the common features of the enamel presented in a somewhat different manner from that in the text-books and perhaps what was learnt as students. With the time at my disposal, it is impossible to discuss at any length the finer details of structure, development, and pathology. I am therefore limiting my talk to a consideration of the general appearances of certain well-known features of enamel structure and a brief comment on them, chiefly in the light of my own investigations during the last four years.



Fig. 1.—Ground transverse section of erupted premolar showing common features of enamel structure. Unstained. L, Lamella; T, Tufts; ADJ, Amelo-dental junction (amelo-dental cuticle not visible); S, Enamel surface (the cuticle is not differentiated from rest of enamel). ($\times 27$.)

really do not know what form and structure of the enamel cap as a whole can be regarded as normal, hence I use the word "common" as the title to this paper. I am not sure that the



Fig. 2.—Decalcified section of developing upper deciduous molar aged 8 months. Matrix not completed. Similar features to Fig. 1. Formic-methyl-alcohol decalcification. Ehrlich's hæmatoxylin and eosin. NL, Neonatal line or birth line; Am, Ameloblasts retained on tooth follicle; X, Artifact crease. ($\times 68$.)

words "normal" and "common" are interchangeable. To the practitioner, and indeed to the research worker, the enamel is perhaps the most interesting of the hard dental tissues. Its presence, absence, and destruction are the first observations of the dental surgeon. The research worker is interested in it because it is the chief gateway to the processes which ultimately destroy the tooth. As I have indicated, in order to understand the pathology of dental caries, even though the precise aetiological factors remain obscure, a knowledge of the structure of enamel is essential. Certain broad aspects of this structure have been known for many years and are now accepted, but in detail it can be said that there is great confusion, and there is little that is generally acceptable.

Caries, hypoplasia, and allied subjects will not generally be discussed. In order to study disease processes in any organ, a knowledge of "normal" structure and function is essential. Do not mistake the term "normal" to mean perfect. I have never seen a perfect tooth, and although I use the word "normal" I

* A lecture given to the Northern Counties Branch of the British Dental Association on June 7, 1951.

Let us first look at part of a ground transverse section of a permanent tooth crown (Fig. 1). Here we see certain features which have been the seat of discussion since they were first recognized between fifty and a hundred years ago. At the surface of the section is the so-called cuticle (not well

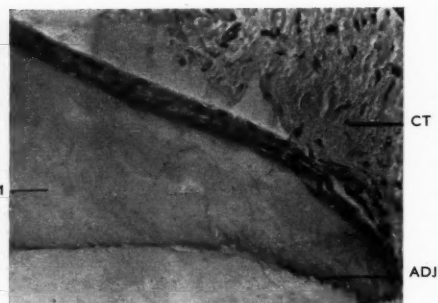


Fig. 3.—Decalcified section of gingival attachment area of erupted young premolar showing epithelial cells on chromophobic enamel matrix. Formic-methyl-alcohol decalcification. Ehrlich's hæmatoxylin and eosin. M, Chromophobic enamel matrix; CT, Connective tissue; ADJ, Amelo-dental junction. ($\times 260$.)

demarcated in this type of section). Running from the surface to the amelo-dental junction are bands of darkly appearing structures called enamel lamellæ. At the amelo-dental junction are short dark structures called tufts. The amelo-dental border is formed by a scalloped outline which shows a series of crater-like depressions, the convexities of which face the dentine. Between the enamel and the dentinal surface there is a structure not usually visible in a ground section and known as the amelo-dental membrane or cuticle. Fig. 2 shows similar structures in a developing deciduous molar aged 8 months. The birth line of Rushton (1933) is quite visible in this illustration.

THE ENAMEL CUTICLE

You will remember that in 1839 Nasmyth described a membrane covering the enamel surface. Paul in 1896 described the membrane as consisting of two parts, a cellular layer and an inner hyaline layer. This inner hyaline layer is also known as the cuticle. Gottlieb

(1947) and others have described this cuticle as also consisting of two parts, a secondary cuticle and a primary cuticle. Gottlieb declared that the epithelial cells were part of the reduced enamel epithelium. This latter is entirely supported. Fig. 3 shows a section through the gingival attachment area of erupted enamel in which the cells of the gingival attachment are seen in close apposition to the enamel surface. In my opinion there is normally only one so-called membrane and this is identical to the primary cuticle of Gottlieb. This primary cuticle is usually described in the literature as the secondary cuticle. One can sometimes find a cornified layer or stratum corneum of the gingival or reduced epithelial attachment. This cornified layer may or may not be present in the erupting and fully erupted tooth. Sometimes a fine line belonging to the border of the epithelial cells can be seen in microscopical sections. These do not belong to the enamel structure and contain no calcium salts. It has been shown (Hodson, 1949, a) that if a whole

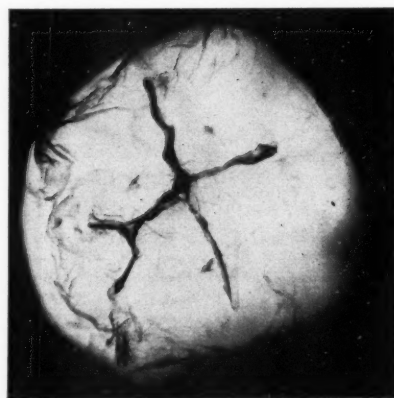


Fig. 4.—Micro-dissection preparation of upper erupted molar showing isolated cuticle in situ. Dentinal surface is seen through the cuticle. Hydrochloric-methyl-alcohol decalcification. Unstained. ($\times 7$.)

tooth which has been erupted for some time be suitably decalcified, the whole of the cuticle or surface layer can be more or less recovered in a similar morphological form to that in which it existed in the calcified crown. Fig. 4 shows a case in situ, and Fig. 5, when dissected off

and photographed by transmitted light. In this form it gives the appearance of a capsule to the crown and I described it as such about two

The ameloblast layer is degenerating. An artefact tear shows the surface cuticle at the base of the ameloblasts in one place and partly

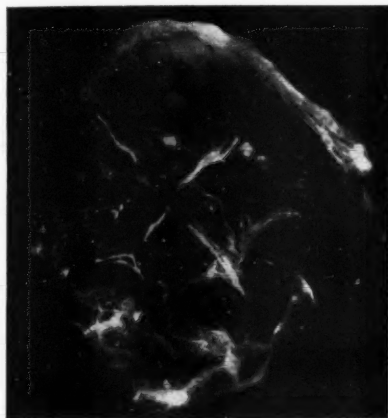


Fig. 5.—Cuticle from Fig. 4 dissected from dentinal surface. Unstained.

years ago. The term “capsule” was of course the term originally given to it by Nasmyth. Since then, however, I have discarded the term

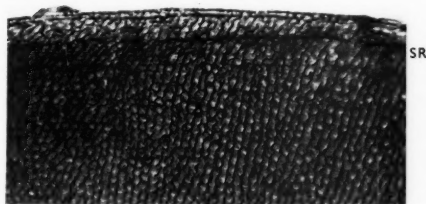


Fig. 7.—Decalcified transverse section of part of crown of same specimen as in Fig. 6, showing surface of completed matrix and similarity of surface cuticle to two incremental lines. Hydrochloric-methyl-alcohol decalcification. Stained Mallory's trichrome. SR, Striae of Retzius. ($\times 260$.)

“capsule” as I found on further investigation that it appeared to be no separate structure, but merely a surface manifestation of the enamel matrix forming an area similar to certain types of incremental lines. Fig. 6 shows a section of unerupted enamel matrix during the final stages of matrix formation.

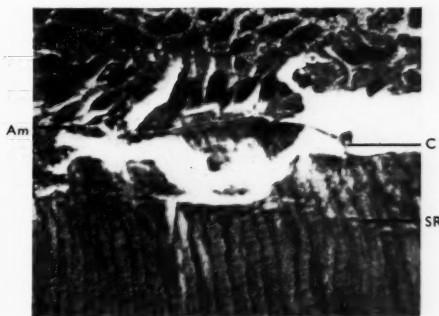


Fig. 6.—Decalcified longitudinal section of developing first upper molar showing “terminal bar” line or internal ameloblastic line forming the surface cuticle—also the similarity to a prominent incremental line. Hydrochloric-methyl-alcohol decalcification. Ehrlich's hæmatoxylin and eosin. Am, Degenerating ameloblasts; C, Cuticle; SR, Striae of Retzius. ($\times 515$.)

lifted from the matrix in another. The part where the matrix has torn shows an incremental line similar to the surface cuticle itself. There is reason to believe that the “terminal bar apparatus” of the literature is merely a granular layer of matrix which in the developing crown appears as an incremental line, and when the crown is completed a similar line becomes the surface cuticle. Fig. 7 shows the surface area of a completed part of the matrix from the same specimen as Fig. 6. The incremental lines are seen to be similar to the surface cuticle line.

The term “cuticle” describes the appearance of the decalcified form of the surface layer, but there the analogy stops. Being part of the enamel, it is calcified, although in most cases probably hypocalcified. It is continuous with the margins of the wide lamellæ as well as other types. It forms a granular line of demarcation continuous with, and similar to, the outer cortical layer of the enamel rods (the classical rod sheath). This is best seen in tangential sections. Fig. 8 shows a composite photograph of the surface of a young erupted permanent incisor cut in oblique and longitudinal sections, in which the identity of the cuticle with the

classical sheath or outer cortex is most striking. That it is the cuticle is seen by the area where the layer has torn and missed being cut by the microtome knife. In this part the surface ends

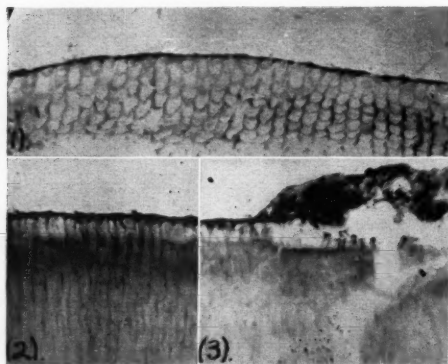


Fig. 8.—Composite picture showing cuticle as surface layer of matrix. Decalcified sections from young erupted incisor. Formic-methyl-alcohol decalcification. Stained Heidenhain's hæmatoxylin. 1, Oblique section of surface; 2, Longitudinal section; 3, Longitudinal section with cuticle in spread form. ($\times 292$.)

of the enamel rods can be identified. The rod markings on the cuticle are, by the way, not just imprints but the actual ends of the rods themselves. A number of changes can take place in the surface layer or layers of the enamel depending amongst other things on the degree of calcification.

The cuticle is also found to be continuous with the incremental lines lining and sometimes passing into some hypoplastic areas, especially those at the surface, and those I have described as tubular hypoplasia (Hodson, 1949, a, b, 1950). In other words, the hypoplastic zone is often demarcated by an incremental line continuous with that at the surface, i.e., the cuticle. There are many other interesting features concerning the surface cuticle which, in view of the time at our disposal, we must pass over.

THE ENAMEL LAMELLÆ

Ever since these structures were noted by Miller (1902) and others, and isolated as tracts of organic material by Bodecker in 1905, they have been the subject of investigation by

almost every dental histologist. A discussion of my findings concerning their development and structure and variations would take a lecture in itself. All I intend to show you tonight are a few examples of lamellæ, in a way which perhaps will give you a clearer idea of their general nature and enable you to visualize them during your everyday examinations. I say visualize, but with appropriate methods of magnification and illumination you can, in fact, see some of them without staining or sectioning. Fig. 9 shows an untouched premolar with a buccal lamella demarcated by appropriate lighting. The tooth was then immersed in silver nitrate solution and the crown cut in half. The lower part of the illustration shows the lamella stained by the solution and passing through the whole thickness of the enamel. It is mainly the thicker and larger type of lamellæ which can be

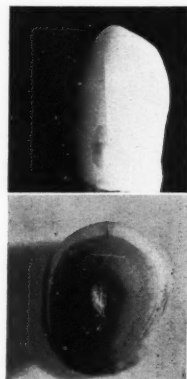


Fig. 9.—Showing a macroscopical view of the surface termination of a lamella (unstained) and a sectional view of the same after staining in bulk with silver nitrate. ($\times 3$.)

demonstrated in this way. They are the classical lamellæ of the literature. Many thinner and very fragile types are also found, but these are best demonstrated in microscopical sections. The thicker type seems to be the more important in relation to the caries process. All lamellæ do not pass through the entire thickness of the enamel. There are great variations in their extent as well as their thickness. Some are only equal in length to part of a single segment

and it then becomes a matter of opinion whether such a structure is described as a tiny lamella or a rod or even inter-rod defect. Now, instead of cutting the crown transversely, let us cut a specimen longitudinally on either side of the lamella and dissolve the enamel with an acid-alcohol solution (say 15-20 per cent HCl in methyl alcohol or methylated spirits). *Fig. 10* shows that the lamella is insoluble in acid and is an organic membranous or sheet-like substance.

The surface distribution of the lamellæ can be studied by a modification of the above technique. Instead of fully decalcifying the enamel, only a superficial decalcification of the whole crown is carried out after first removal of the cuticle, and then staining with methyl violet or silver nitrate. As a rule, the lamellæ retain the stain. The method is also useful for distinguishing between lamellæ and

mentioned in passing that conclusions have been drawn from this fact which show a lack of knowledge of the variation, not only of the environment, but of the types of lamellæ in different places. Sognnaes (1950), for instance, says in view of this distribution that "It is interesting that this [labial surface of anterior



Fig. 11.—Showing lamellæ in a superficially decalcified upper erupted incisor after staining with silver nitrate. Cuticle removed. Note variation in length and thickness. In this and the following illustrations the lamellæ appear somewhat thicker than they really are, due to cuticle remnants adhering to the sides of the organic tracts. ($\times 3$)



Fig. 10.—Showing a decalcified version of a similar lamella to that in *Fig. 9*. Hydrochloric-methyl alcohol decalcification. Stained eosin. ($\times 4$)

artefact cracks. Perhaps the most remarkable and successful case among the many hundreds I have done, is illustrated in *Fig. 11*. Here we can not only see the distribution of the lamellæ in a central incisor, but they can be seen stained within the enamel substance in a somewhat stereoscopic manner. Notice the variation in length and thickness. Lamellæ are common in upper incisor teeth and very common in lower incisor teeth. It may be

teeth] is a rare site of caries as compared to the approximal surface."

There are enormous differences in the nature of the enamel surrounding lamellæ, in both its organic and inorganic fractions, as well as in the types of lamellæ, as for instance, in incisor teeth and those in, say, groove areas. There are also differences between the peripheral lamellæ in different teeth and in different mouths.

Let us now look at a few examples of the distribution and surface appearances of lamellæ on the approximal aspect of teeth in, say, the premolars. *Fig. 12* shows quite a number of these structures, eight or more being clustered in the area surrounding the contact point and below, some reaching to the amelo-cemental junction. *Fig. 13* shows the opposite side of this specimen. The differences in number, distribution, and appearances are striking. Notice particularly the continuity of a hypoplastic area in the form of a defective groove

or fissure with a wide organic lamellar tract reaching to the amelo-cemental border. Now

enamel in different cases. In this case a young crown was put into 25 per cent hydrochloric

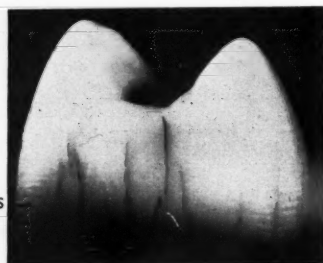


Fig. 12.—Erupted premolar showing many lamellae on approximal surface. Cuticle removed. Stained methyl violet. HS, Hunter-Schregger bands. ($\times 5-25$.)

look at Fig. 14, which shows a quite different arrangement of the lamellae. Instead of a hypoplastic groove defect toward the occlusal



Fig. 14.—Showing another premolar with various lamellae. Note the hypoplastic area (beneath gingival attachment) with lamellae extending from upper and lower borders. ($\times 5-25$.)

surface, we have a hypoplastic defect almost at the amelo-cemental junction. Lamellae are seen projecting from the upper and lower borders of the defect. There is a somewhat thick lamella on the right-hand side of the crown. Fig. 15 shows one pronounced and a few less stained lamellae. Cases are also found where there are no approximal lamellae. In most of these photographs the Hunter-Schregger lines are well seen and although most lamellae run at right angles to these lines, cases can be found where they run parallel to them.

Fig. 16 illustrates one point mentioned above regarding the differences in the surrounding

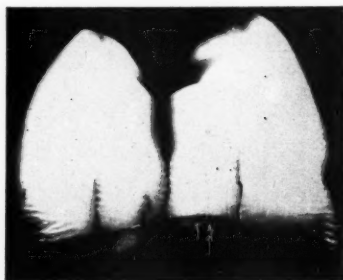


Fig. 13.—Showing the other side of specimen in Fig. 12 with lamellar continuation of defective groove.

acid in methyl alcohol and left for sixteen hours. Except in some groove areas, the occlusal enamel was dissolved (the tufts are seen at T),

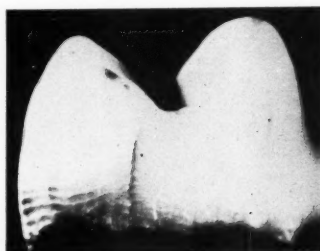


Fig. 15.—A premolar with one main and some smaller lamellae. ($\times 5-25$.)

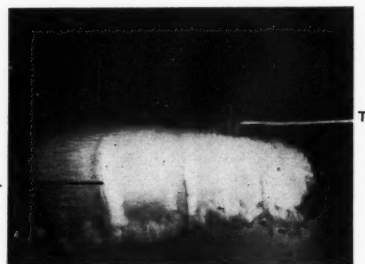


Fig. 16.—Partially decalcified preparation of a young premolar showing uneven decalcification and persistence of enamel in lamellar areas (see text). Cuticle removed. Hydrochloric-methyl-alcohol decalcification 16 hours. Stained eosin. T, Tuft bands; L, Lamella with undissolved enamel. ($\times 5-6$.)

the peripheral enamel was partly dissolved, the least affected being the enamel immediately surrounding the lamellæ. This is only one of a wide range of variations in enamel composition and structure which have been found in



Fig. 17.—Jaw block from female aged 18, showing lamellæ in unerupted and erupted molars. Cuticles removed and whole block stained silver nitrate. ($\times 1.6$.)

association with lamellæ and for that matter without lamellæ.

The distribution of the lamellæ on other surfaces varies in a similar manner to those illustrated. There is, however, one important point we may mention here. Some writers (Sognnaes, 1950, and others) have claimed

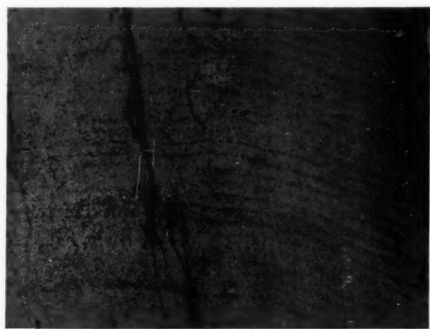


Fig. 19.—Showing part of a decalcified section of the surface layers of the approximal surface of an erupted premolar. Note the lamellæ, the incremental layers, and also the persistence of the rod cortical areas around the lamellæ and their absence elsewhere. Formic-methyl-alcohol decalcification. Stained Heidenhain's hæmatoxylin. ($\times 57$.)

that the lamellæ are mainly post-eruption phenomena, particularly cracks, and that they are rarely found in unerupted teeth. There

seems to be a major error of statement here, since any unerupted, completed crown can,



Fig. 18.—A high magnification of the approximal surface of an unerupted premolar showing surface termination of a lamella and the incremental layers. Cuticle removed. Stained methyl violet. ($\times 15$.)

by sectioning or by the procedures described above, be shown to contain lamellæ in similar diverse forms and distribution to those in

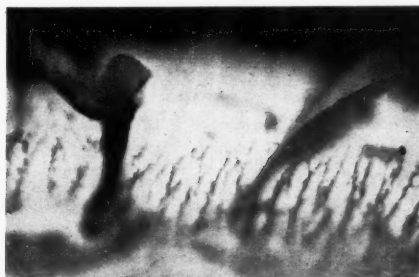


Fig. 20.—A micro-dissection preparation showing a view of lamellar and tuft bands in situ running down an approximal surface of a molar—looking down from the occlusal surface. Hydrochloric-methyl-alcohol decalcification; embedded in gelatin. Stained eosin. ($\times 24$.)

erupted teeth. Fig. 17 shows a portion of a jaw of a girl aged 18 in which the second molar is erupted and the third molar unerupted. The cuticles of both teeth were removed after the whole block had been stained with a silver nitrate solution. The surface markings of the

lamellæ in both erupted and unerupted molars can be seen. *Fig. 18* is a high magnification of an approximal surface of an unerupted premolar, the crown of which was fully formed. The surface markings of the bands of Retzius, or incremental layers, are well shown, together with a lamella running at right angles to them. *Fig. 19* shows a decalcified section through the approximal surface of an erupted premolar,

in *Fig. 21*. A lamellar sheet is seen projecting out of the bands of tuft matrix. The lamella is sufficiently transparent to enable the tufts on the other side to be seen through it. If such a specimen is passed through the various histological reagents and sectioned, a microscopical appearance of the classical lamella and tufts is obtained (*Fig. 22*). I might say for those who may care to repeat these techniques, that

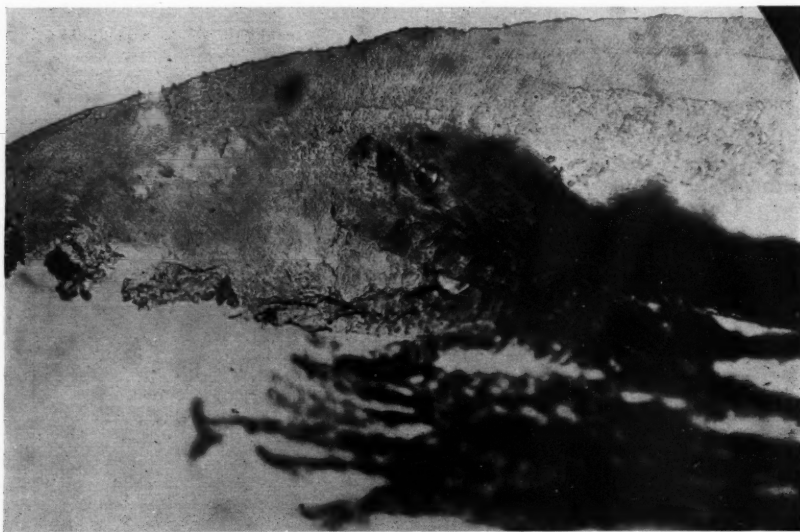


Fig. 21.—Showing a dissection from the dentinal surface of a layer of tuft bands with a lamella. Photographed from the side, the distant tuft bands being seen through the transparent lamella. Hydrochloric-methyl-alcohol decalcification; embedded in gelatin. Stained eosin. ($\times 46$.)

showing the microscopical appearances. Note here that the incremental lines are reproduced, giving a similar picture to the surface view. The lamella is a thinner one than that shown in *Fig. 18*.

Using a micro-dissection technique, it is possible to manipulate the larger type of lamellæ in many different ways. If the enamel of a molar is dissolved away and the approximal surface viewed from the top, we obtain the picture shown in *Fig. 20*. Two lamellæ are seen tracking down the proximal surface. The dentinal ends are surrounded by the enamel tuft matrix. If we dissect such a specimen from the dentine surface and look at it sideways, we see a picture like that shown

great patience is necessary and a great deal of practice. I won't bother you with details of technique; some have already been published (Hodson, 1949, a, b, 1950) and a fuller account will be published in the near future (Hodson, 1951). Now if we remove the cuticle by decalcification and spread it on a slide, the surface terminations of the lamellæ can be identified. Instead of removing the cuticle, let us decalcify a crown and dissect off lamella and cuticle together and then invert the specimen and concentrate the light on the lamella. *Fig. 23* shows such a specimen in which can be seen the glistening and membranous-like character of the lamella. The cuticle is just visible in the background.

Regarding lamellæ and groove areas, there are great variations. Some of the forms have been illustrated in previous publications (Hodson, 1949, a, b, 1950). Both normal and hypoplastic grooves may be found with and without lamellæ. They may join normal grooves, or connect tubular and other hypoplastic lesions within grooves, with one another; they may pass from the occlusal edge of a groove and track down a peripheral surface to the amelo-cemental junction. They may merely connect a groove or a hypoplastic lesion with the dentinal surface.

Lamellæ may or may not be connected with the amelo-dentinal junction; some reach to the dentine and others enter cracks in the dentine.

The development and microscopical structure of lamellæ provide one of the most fascinating studies in dental histology. The study of the literature on enamel shows an

(1928) described two types, one consisting of poorly calcified rods and inter-rod substance and the other of cracks formed during development of the enamel. Beust (1930) thought they belonged to a system of capillary channels. Meyer (1935) described them as uncalcified

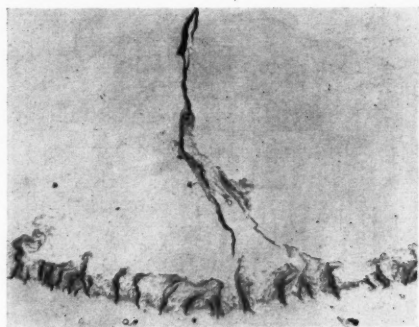


Fig. 22.—A longitudinal section of a similar specimen to Fig. 21, showing classical features of lamella and tufts. Stained Heidenhain's hæmatoxylin. ($\times 60$.)

attempt on the part of investigators, including those of the present day, to describe structures and aetiological factors in terms of a uniformity which is often quite contrary to the facts. The researches on the nature of the lamellæ are a typical example of this. Let us recall some of the common theories regarding their nature. Miller (1902) thought lamellæ were uncalcified rods. Bodecker (1905, 1928) described them as "compact organic matter in which there is no trace of rods". Gottlieb (1915) and Orban

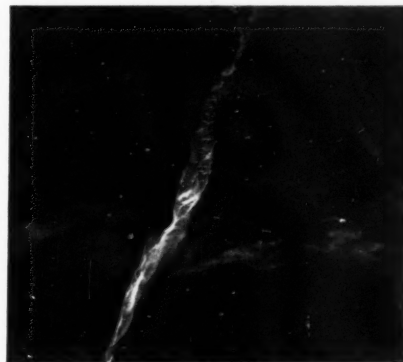


Fig. 23.—Showing a dissection of a lamella with cuticle intact and inverted and the light concentrated on the lamella. The cuticle is just visible in the background. Embedded in gelatin. Stained eosin. ($\times 24$.)

inter-rod substance. Fish (1932) thought they were uncalcified collapsed "prism sheaths". Gustafson (1945) described them as less mineralized "prism sheaths". Chase (1948) confirmed his earlier opinion that they were cracks formed during development and after eruption. Sognnaes (1950) recently postulated that the common variety of lamellæ were neither formative defects nor uncalcified rods, but were cracks formed after eruption. It seems to me that there is little unanimity as to what lamellæ are. I think the real basis of the problem is that investigators have not yet satisfied themselves that there are different types. Until the mode of causation of the different types is understood, we must rely on morphology for classification.

I have briefly mentioned some of the views regarding the lamellæ, and before passing on to another subject, I would like to show you some photomicrographs of one or two of many thousands of sections, from which you will see that, with some exceptions, the views of other workers can be supported in one or more

details, but that the morphology of all lamellæ, including the classical type, cannot be described in terms of any one single character, pattern, or tract. This fact is of prime importance in the structure of enamel. Indeed the type, position, and nature of the organic material may show variation in one and the same lamella. Fig. 24 shows a decalcified section of erupted enamel in which can be seen one type of lamella which I believe to be the

which, if the surrounding matrix is anything to go by, were, prior to the disturbance hardly visible. The contents are displaced granules of

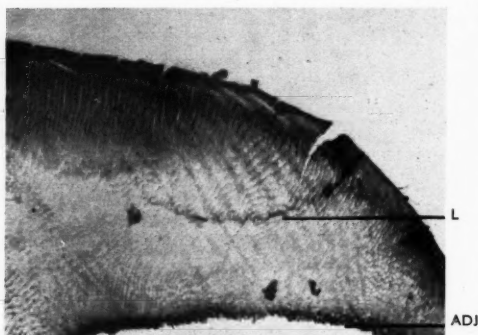


Fig. 24.—Showing part of a decalcified longitudinal section of enamel with a crack form of lamella. Formic-methyl-alcohol decalcification. Note incremental layers. Stained Heidenhain's hæmatoxylin. L, Lamella; ADJ, Amelo-dentinal junction. ($\times 142$.)

typical developmental crack type. Fig. 25 is a magnified view of the central part and shows a disturbance cutting across the rods, especially at the junction of segments. The disturbance not only involves some whole segments but it will be noticed that the segment "sheath", or outer cortex, as I prefer to call it, is deeply staining and thicker in many places. The segments are, in places, separated, and the crack generally is filled with basophilic granules which have entered it, in this case probably mostly from the involved matrix, when the crack occurred in the matrix stage. Fig. 26 shows a similar lamella in a first permanent molar at 13 months or about the time the matrix of the crown is being completed. Here the contents were eosinophilic. Fig. 27 shows a high magnification of part of another lamellar crack from the same specimen. The disturbance in many places involves areas where segments join; it opens up inter-rod areas

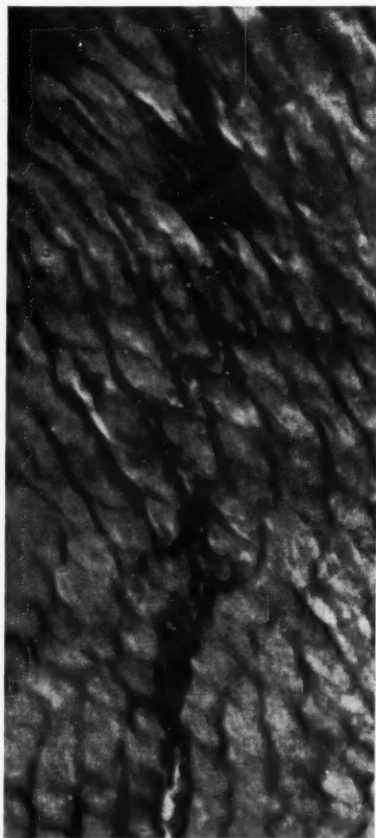


Fig. 25.—A higher magnification of part of lamella in Fig. 24, showing path of crack with involvement of the rod segments. ($\times 1230$.)

the formed matrix, as well as nuclei and granules drawn in from the ameloblast layer. The morphology of the granular material in both cases is remarkably similar. Most of the crack type of lamellæ appear to originate during and after the final stages of matrix formation and are probably related to the physico-chemical processes of maturation as postulated by Orban and others. Some lamellæ associated with hypoplastic defects, especially

on the occlusal surface, often originate at the beginning of amelogenesis and even before

the occurrence of the main hypoplastic area. These are most probably true defects in

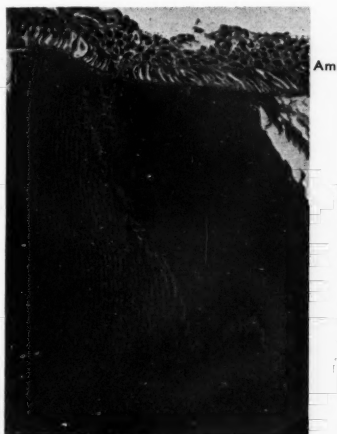


Fig. 26.—Showing a similar crack lamella to that in Fig. 24, in the matrix of a developing upper molar. Hydrochloric-methyl-alcohol decalcification. Stained Ehrlich's hematoxylin and eosin. Am, Ameloblasts near termination of amelogenesis. ($\times 142$.)

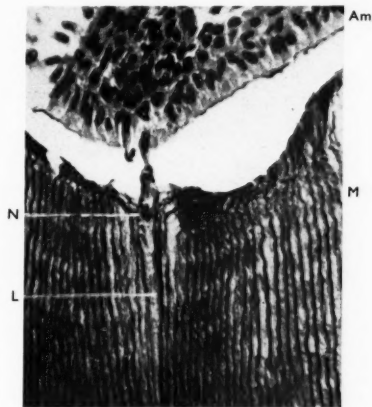


Fig. 28.—Part of a decalcified longitudinal section of a lower developing deciduous second molar aged 8 months. This section shows an immature part in the central groove in which is a lamella-like tract consisting of eosinophilic granular material. The upper part is connected with an ameloblast, and below this are remnants of an ameloblast cell. Formic-methyl-alcohol decalcification. Stained Ehrlich's hematoxylin and eosin. L, Eosinophilic lamella; M, Basophilic matrix; N, Nuclear fragments; Am, Ameloblasts. ($\times 512$.)

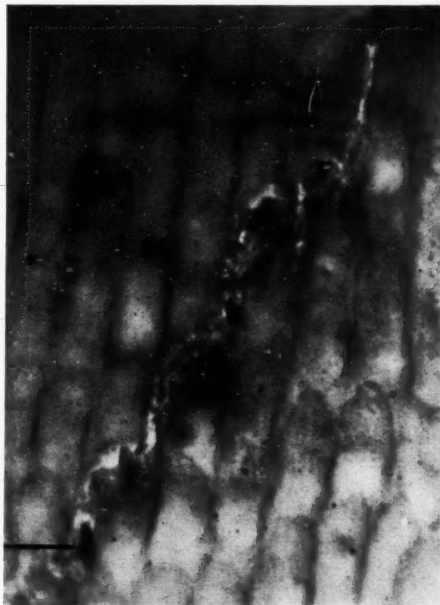


Fig. 27.—A high magnification of another crack lamella in developing enamel matrix showing similar features to Fig. 25. Note the similarity of granular contents. The track contained ameloblast cells with nuclei and free granular material, etc. Stained Ehrlich's hematoxylin and eosin. N, nucleus. ($\times 1230$.)

amelogenesis or lamellar forms of hypoplasia. Others are hypocalcified rod areas due to a disturbed matrix.

It is interesting to note that lamellar cracks sometimes cause a maturation defect in a wide area of the surrounding matrix.

Fig. 28 shows a type which consists of an immature rod in the eosinophilic stage (or pre-enamel of some authors) of primary enamel, i.e., the area has not become basophilic. The specimen is interesting in that this lamella is probably a defect in solidification or gelation of the matrix. The matrix immediately around is still in a basophilic state.

Fig. 29 shows a common type of lamella which, in the main, passes in between rods. It does not seem to be understood, however,

that this position of lying between rods is not always followed throughout the entire extent

identical tract can be found in a tuft area (see Fig. 52). Fig. 31 shows a not uncommon

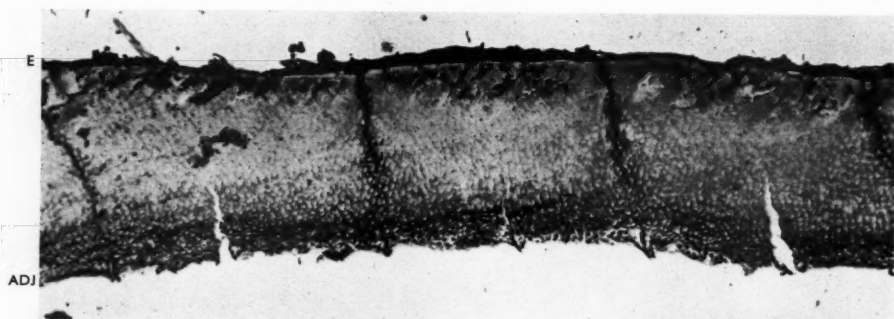


Fig. 29.—Part of a longitudinal decalcified section of an erupted young central showing a number of lamellæ beneath the gingival attachment. Part of the epithelium is still attached but overstained. Formic-methyl-alcohol decalcification. Stained Heidenhain's hæmatoxylin. E, Epithelial cells; ADJ, Amelo-dentinal junction. ($\times 142$.)

of the lamella. The organic tract commonly involves adjacent rod margins or cortices and frequently involves whole or part rod segments. This and other types are also found to cut across enamel rods in a manner which suggests that they originated after the matrix had been laid down (i.e., of crack origin). In a number of cases, however, in tracts a little different from those shown, lamellæ lying between rods seem to be composed of matrix material which has not taken part in rod formation and calcification. This material, as well as the granular material referred to above, can be shown to be composed of morphologically similar granules or "shapes" of protein substance which are clearly demonstrable within the active ameloblasts.

Fig. 30, at very high magnification, shows a basophilic tract passing within but not entirely filling the area between the rods. Note that here the area accommodating the tract is greater than anywhere else in the field. Notice also how the tract keeps close to the rods on one side and then crosses the area to carry on down the side of the rods on the opposite side. Here again, too, as in other areas, the lamella involves the rods themselves. Later on we shall see how an almost

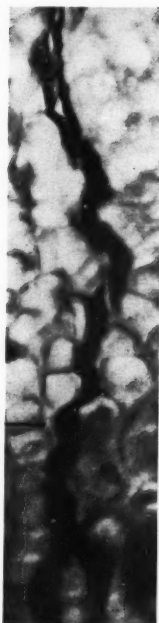


Fig. 30.—Showing part of a decalcified section of the enamel of an erupted premolar cut parallel to the dentine on an approximal surface. Note the varied path of the lamella, especially its position in some places within but not completely occupying the area between the rods (A). (Cf. Fig. 52.) Formic-methyl-alcohol decalcification. Stained Heidenhain's hæmatoxylin. ($\times 1230$.)

linear form which not only passes round and between rods, but right through them.

The type which many investigators have described is shown in Fig. 32. Here we see, in the main, deeper staining and in places a thicker part of the rod cortical zone. We shall

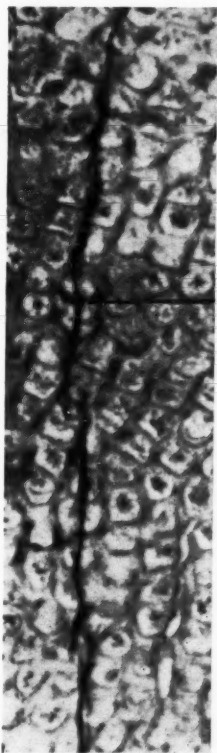


Fig. 31.—Transverse section of erupted enamel matrix showing a linear type of lamella passing around and through enamel rods. Note at A that a branch passes around the cortex of the rod. Formic-methyl-alcohol decalcification. Stained Heidenhain's hæmatoxylin. ($\times 1230$.)

also meet this character again in the tufts (Fig. 54). Note here the organic basis of the incremental bands which are accentuated in calcified ground sections. It will be observed that the lamella passes through the layers without apparent alteration. Variations in the nature of the organic content of layers of rod segments which produce one of the features of the incremental layers are not reproduced in the lamellæ.

A final word about lamellæ and bacteria. Although we are not considering pathology, it might be expected that since the enamel erupts into, and is continually bathed by, a secretion normally with a high bacterial content, the chances of bacteria penetrating the enamel would be reasonably great. While the presence of bacteria in hypoplastic lesions is pathological

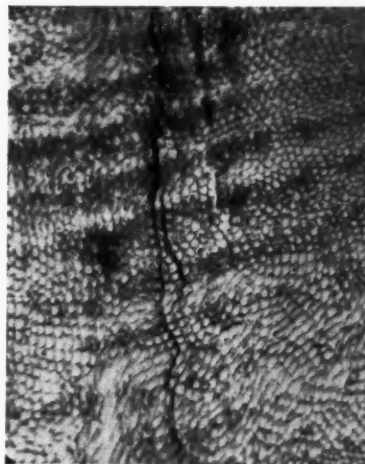


Fig. 32.—Decalcified erupted enamel matrix showing a linear lamella in the form of thick and thin rod cortex areas, especially the outer layer (or sheath). Compare with Fig. 54, showing similar characters. Note the incremental layers. Formic-methyl-alcohol decalcification. Stained Heidenhain's hæmatoxylin. ($\times 312$.)

in the sense that neither lesion nor bacteria should be present, there is no reason why the mere presence of bacteria should be diagnosed as caries, or early caries—potential caries might be acceptable. There is a belief that all lamellæ are infected. I have not found this. Some lamellæ are, in fact, so thin that it would not be easy for bacteria to penetrate them. The larger type of lamellæ in erupted teeth above the gingival attachment usually contain bacteria, but as Rushton (1948) noted in the case of exposed dentine, Gram-positive organisms may be present without caries development.

[The continuation of this article will appear in our October issue.]

A CASE ILLUSTRATING THE DIRECTIVE ACTION OF FACIAL MUSCLES UPON THE PASSAGE OF A FOREIGN BODY

By E. A. SCHER, M.B., B.D.S., M.Sc., F.R.P.S.

The Department of Anatomy, University College, Cork

THE courses taken by foreign bodies which penetrate the skin seem often so erratic as to be almost unpredictable; the last two wars

who was in doubt as to whether a relatively large mass presenting in the *sulcus vestibuli* buccal to the second deciduous molar (Fig. 2) was or was not a sequestrum. Inspection in the dental surgery did not resolve this problem. The area of mandible seemingly involved was then X-rayed. The radiological findings were positively against any notion that there was a sequestrum, or even any inflammation of



Fig. 1.—Shows external appearance of case described in text. The arrow points to the healing wound of entry. The area circumscribed by the dotted line is the surface marking of the portal of exit into the *vestibulum oris*.

have furnished many illustrations of this fact. It may, then, be of interest to give a short account of a case in which the mechanism of passage of such a body seems fairly clear.

CASE REPORT

The patient, B. K., aged 4 years, was referred to the Dental External Department of the South Charitable Infirmary, Cork, on March 24, 1951. Three weeks earlier the child had been hit with a piece of wood. He was brought to a chemist who dressed the small wound, which was about one inch below the right labial commissure (Fig. 1); the photograph was taken three weeks after inspection at hospital, when the wound was largely healed. A day before the child was sent for dental examination he had been brought to a physician



Fig. 2.—The right oral vestibule of the case described, as seen at the hospital. The arrow points to the wooden splinter in its final position.

the bone. Moreover, the X-rays showed no foreign body. It was then judged to be clinically proper to pluck out the body directly with an appropriate tweezers. This was done without difficulty. It proved to be a large

swollen splinter of wood, clearly a piece of that which had caused the external wound. The mother's anxiety and the physician's doubt had been due to a continued state of swelling of the cheek, between the time of wounding and the first clinical inspection.

From an examination of the positions of the external wound, and of the swollen splinter, and from a consideration of the

be moved by the walls of its muscular prison much as is blood in *venae comites* by the combined pulsations of their artery and the surrounding muscles. Further, the connective tissue of a young child is a softer jelly than that of the adult, and so this pumping action would be of marked effect, and continuous until the splinter reached the submucous tissue; where bowstring pressure (which later could support

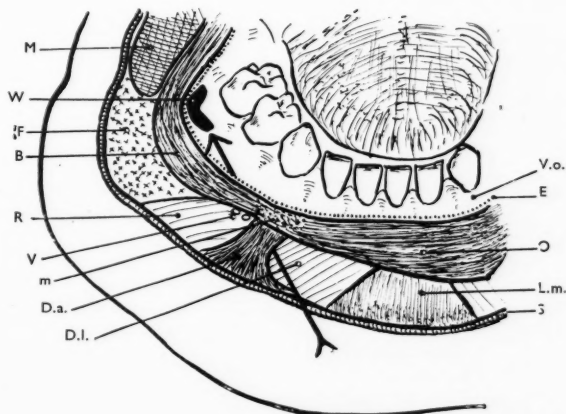


Fig. 3.—The arrow shows the course taken slowly by the splinter from its initial to its final position. M, Masseter; W, Wooden splinter (final position); F, Buccal fatty pad; B, Buccinator; R, Risorius; V, Facial vessels (artery and vein); m, Modiolus; D.a., Depressor anguli oris; D.l., Depressor labii inferioris; S, Skin (cut edge); L.m., Levator mentis; O, Orbicularis oris; E, Epithelial lining of mouth; V.o., Vestibulum oris.

musculature which lies between these two sites (Fig. 3), it is possible to reconstruct not only the probable course of the splinter but also the factors which determined it. As the diagram shows, to take the course indicated by the arrow the splinter must have been pushed between the superficial and deep layers of the labiomental musculature. Thenceforward, successive contractions of that musculature, coupled with the initial wedge-shape of the splinter, would constitute sufficient causes to determine a oneway "pumping" action of the muscles upon the splinter in the connective tissue between its superficial and its deep parts. The broader base of the splinter had to go inwards because the elastic tissue of the skin had closed the narrow wound against it; and again it would

a lower denture) would suffice to make a new wound and to expel the splinter, even though swollen, into the vestibule of the mouth. The fact that there was no complaint of pain, coupled with the final position of the splinter, makes it probable that the splinter passed under the lower border to the buccinator rather than through it—that is, its whole journey was along connective-tissue planes, like the route of the surgeon's forceps in one operation for prostatectomy. The only textbook illustration demonstrating this possibility in the young child appears to be in Corning (*Lehrb. d. Top. Anat.*, 1931, Fig. 93).

My thanks are due to Professor M. A. MacConaill, M.B., D.Sc., of this Department, for his advice; and to Dr. T. O'Keeffe, D.M.R.E., for radiographic investigation.

DENTAL RADIOGRAPHY AND DARKROOM PROCEDURE

COMMON FAULTS AND HOW TO AVOID THEM

*From Ilford Limited Department of Radiography and Medical Photography,
Tavistock House North, Tavistock Square, W.C.1.*

3. EFFECT OF EXPOSURE AND DEVELOPMENT ON IMAGE QUALITY

It is bad practice to try to compensate for errors of exposure by varying development times. Good quality images are only produced

a. When a film is developed the solution loses some of its activity because a little of the metol and hydroquinone becomes oxidized, and bromide released from the film is introduced into the solution. This additional bromide



Fig. 1.—A normal film, clean and well graded.

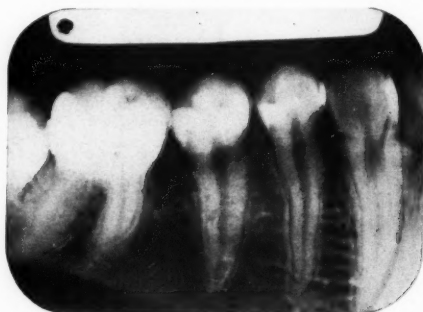


Fig. 2.—Underdevelopment, giving rise to a thin flat result.

when correct development is given following optimum exposure.

Correct development means using a fresh accurately compounded developer for the prescribed time and temperature—namely five minutes at 65° F. These conditions produce a clean well-graded image suitable for dental interpretation (Fig. 1). Deviation from correct development may give rise to unsatisfactory results, and may happen in numerous ways.

In a developer there are two reducers (developers proper in the form of metol and hydroquinone), a preservative (sodium sulphite), an accelerator (sodium carbonate), and a chemical to prevent fog (potassium bromide). The life of a developer depends on (a) how much it is used, and (b) how carefully it is stored.

tends to slow up the action of the developing agents. These changes are very small indeed and pass unobserved from film to film, but the action is cumulative, and there is a gradual weakening of the image, with a loss of contrast. This deterioration of image quality can be prevented by very gradually increasing development time, but must not be carried too far, otherwise the films will become stained.

Underdevelopment is obviously brought about by giving less than the prescribed five minutes at 65° F. or by giving the correct time but with the developer at a lower temperature. The effect of underdevelopment is to produce a thin flat image (Fig. 2). A similar result is obtained with an exhausted developer, except, in this instance, a yellowish stain is present. Underexposure may at first

seem somewhat the same as underdevelopment, but detail is lost in the lower densities and, whilst the result is thin, it possesses reasonable contrast.

Overdevelopment produces a dense veiled image. This is brought about by development being excessive, or by the temperature being too high (Fig. 3). Overexposure with normal development gives a similar image, but it has perhaps a little less contrast and is free from veil.

b. The method of storage of the developer is important, and its useful life depends on this to some extent. On exposure to air gradual oxidation takes place, and if the developer is little used it should be stored in such a way as to exclude as much air as is possible from the surface of the solution. This can be done by rebottling it after use in a

container small enough to reduce the air space to a minimum, or by using a piece of

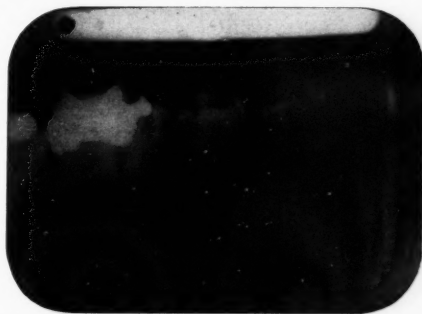


Fig. 3.—Overdevelopment, giving a dense veiled result.

wax-impregnated wood as a floating lid on the surface of the solution.

CRITICS' CORNER

(Under this heading we print letters which discuss points arising from articles which have appeared in the DENTAL PRACTITIONER, together with the comments of the authors. We trust that this section will prove of interest to all our readers and stimulate further discussion.)

Balanced Occlusion

Dear Mr. Grewcock,

I have read with interest your survey of the principles involved in the establishment of balanced occlusion which was printed in the DENTAL PRACTITIONER, Volume I, No. 8, April, 1951, and wish to express my admiration for a well-knit commentary on this important aspect of dentistry.

I do hope you will forgive an encroachment on your time in answering my questions.

On page 236 intriguing aspects are suggested in "A simple rule for all cases is never to raise a bite unless it is found to be essential, after careful consideration has been given. In every case a check-up should be made, by standardized radiographs, to ensure the correct position of the condyle in the glenoid fossa . . .". The second sentence is of particular interest, and it is on this facet that I would like more light to be thrown as the context makes a proper understanding appear fundamental.

1. First, a brief comment on the standardized radiography. Presumably these are of the temporo-mandibular joint as the joint is shadowed in lateral head radiographs, although the position of the condyle but not the fossa may be deduced. Do you use the Lindblom apparatus? What positions of the mandible are recorded?

2. What norms have you established for condylar position or what are the criteria of abnormality in condyle position?

3. As the terminal closure takes place mostly with a rotational movement about an inter-condylar axis and not by a translatory movement of the condyles, what evidence can you obtain from the radiographs which is not as readily and reliably attained by observing, clinically, the closure of the mandible from rest position, to initial point of contact, to habitual centric occlusion or point of maximum interdigitation of the cusps; and also by observing the amount of free way space?

4. Finally, and I hope not too wearisome for you, what instructions do you give the patient when you are recording the rest position when using wax?

Best wishes,

Yours faithfully,

J. W. JOHNSTON,

Lecturer, Prosthetic Department,
University of Otago Dental School,
Dunedin, New Zealand.

Mr. Grewcock's Reply

Dear Mr. Johnston,

Thank you very much for your letter and kind remarks, which I greatly appreciate.

I find some difficulty in doing justice to your relevant inquiries in a letter. However, I will try, in the limited space available, to deal with the essentials in so far as they have practical application.

As a basis of normality I recognize the establishment of the anterosuperior surface of the condyle in juxtaposition with the postero-inferior surface of the eminentia articularis when the mandible is in rest position. Radiographically this shows a joint space of fairly constant width posteriorly, superiorly (rather wider), and anteriorly. Until further evidence indicates otherwise, we must accept the premise that terminal closure of the mandible is purely rotatory round the condylar axis, so that any variation of the condyle to reposition in occlusion can be assumed to indicate overclosure. In other words, two positions of the mandible are recognized—namely, the *rest position* and the *occlusal position* in which, in so-called normal cases, no gross comparative anteroposterior condylar variation is seen.

Disregarding lateral displacement, any re-trusion or protrusion of the condyle head from rest position on terminal closure can be regarded as abnormal.

I regard radiographic evidence of the condyle head position as purely an adjunct to the more reliable clinical assessment, to be used solely in conjunction with, and not in place of, clinical judgement.

I have the Lindblom apparatus, but feel, perhaps quite wrongly, that the standardized

angulation which this permits limits its general application. I believe that clear presentation of the condylar head position can be demonstrated better, according to the age of the patient, by variation from 15° to 25° in the vertical plane. I am hoping to carry out some more work on this theme and until then it would be quite wrong to deny the extreme usefulness of this apparatus.

The technique I use is simple and without apparatus, on which grounds I agree it may be condemned as lacking in standardization. The head of the patient is placed in the Frankfort plane position and two X-rays are taken of each side, one with the mandible in rest position and one in occlusion, care being taken to ensure no movement of the head or tube between taking both positions of the mandible on each side. The angulation of the tube is recorded and repeated as a check, if some form of occlusal stabilizing appliance is made.

So far as your general queries are concerned, I feel that even Thompson and Brodie have now realized that the only true statement that can be made of the free way space is that there *must* be one!

So great can be the variation within the normal as to preclude its assessment as having any fundamental basis for determining the physiological occlusal vertical dimension.

My method of obtaining the rest position is nothing new. Complete relaxation of the patient before any attempt is made is a natural prerequisite, and then a repetition of the "M" sound until one's intuition is quite satisfied that the required position is registered. Repeated gentle tapping with the finger-tips on the mental foramen area appears, for some inexplicable reason, to hasten this end in difficult cases.

I have tried to explain, very inadequately, in this all too short reply, methods which I have used in the past few years. These methods, I am only too well aware, are limited in application, but they have in practice met with a measure of success in the treatment of some of these cases.

Yours very sincerely,

RONALD J. G. GREWCOCK.

PARLIAMENTARY NEWS

Questions and Answers

SCHOOL DENTISTS

Air Commodore Harvey (C., Macclesfield) asked the Minister of Education how many dentists were employed in State schools; and how this figure compared with that of twelve months ago.

Mr. Tomlinson, in a written reply, said: The number of dental officers in the School Dental Service at the end of 1950 was equivalent to 717 full-time officers as compared with the equivalent of 738 full-time officers at the end of 1949. (*Th.*, July 26.)

DENTISTS IN CARDIFF

Mr. George Thomas (Lab., Cardiff, W.) asked the Minister of Health whether he was aware of the distress caused in the Cardiff West constituency by certain dentists who refuse to give immediate treatment under the terms of the National Health Scheme to people suffering from acute toothache, but who offer to give the necessary treatment if the patient makes a cash payment of 12s. 6d.; and what action he proposed to take in this connexion.

Mr. Blenkinsop, Parliamentary Secretary, in a written reply, said: No, sir; persons in urgent need of emergency treatment should get in touch with the Executive Council, who will always help them find a dentist who will provide the necessary treatment under the National Health Service. (*Th.*, July 26.)

DENTAL NURSES SCHEME

Squadron-Leader Albert Cooper (C., Ilford, S.) asked the Minister of Education if he was considering plans to introduce a dental nurse scheme into the School Dental Service, along the lines of the New Zealand scheme.

Mr. Tomlinson, in a written reply, said: My rt. hon. friend the Minister of Health and I still have under consideration the report made last year by the United Kingdom Dental Mission on New Zealand School Dental Nurses. We are not yet in a position to make a statement. (*Th.*, Aug. 2.)

MATERNITY AND CHILD WELFARE

Sir Hugh Lucas-Tooth (C., Hendon, S.) asked the Minister of Health how many local health authorities have no facilities for the dental care of expectant and nursing mothers and of children who had not attained school age; and whether he would circulate with the Official Report a statement giving particulars of those authorities providing such facilities, giving the number of dentists employed in each case.

Mr. Walker-Smith (C., Hertford) also asked the Minister of Health what arrangements he had made to enable expectant and nursing mothers to receive free dentures when the local authority concerned is not able to provide any such service under Part III of the National Health Service Act, 1946, by reason of the shortage of dentists.

Mr. Marquand, in a written reply, said: With permission I will answer this and the following question together. All local health authorities have a statutory duty to arrange for the dental care of these priority classes, and all have included provision for this in their statutory proposals for carrying out that duty, which they have to submit to me. Some authorities, however, have been unable to implement their proposals owing to difficulty in obtaining the many dentists required, and I am obtaining up-to-date information on this which I will communicate to the hon. members as soon as possible. In such cases dentures are obtainable, of course, under the General Dental Service and the Assistance Board is available for hardship cases in the usual way. (*Th.*, Aug. 2.)

NATIONAL IDENTITY CARDS

Mr. Gerald Wills (C., Bridgwater) asked the Minister of Health whether under his regulations dental and medical practitioners are entitled to demand the production of their patients' National Identity Cards for the purpose of inserting these particulars on his department's forms.

Mr. Marquand replied: No, sir. Patients desiring treatment under the National Health Service are asked to give their National Registration numbers as an additional means of identification, and normally do so.

Mr. Wills asked if in view of this answer the Minister would discontinue the practice of compelling doctors and dentists to put the National Registration identity number on all papers submitted to his office.

He said if they had no right to demand the card it was hard for them to be certain of the accuracy of the number they put on the form.

Mr. Marquand agreed there was a difficulty if patients would not co-operate. But without it additional administrative work would be involved. It was more efficient to have numbers—"in Wales there must be thousands of David John Williams; it does not do anyone any harm".

Dr. Charles Hill (N.L.C., Luton): How did they get on in the days of National Insurance in Wales before the introduction of identity cards?

Mr. Marquand: I am sure they had a great deal of trouble. (*Th., Aug. 2.*)

DENTAL BOARD OF THE UNITED KINGDOM

SUMMARY OF REPORTS OF COMMITTEES, MAY, 1951

DENTAL HEALTH EDUCATION

Progress is now being made with the new film authorized by the Committee in November last. The Advisory Sub-Committee have considered the possibility of diagrammatic physiological instruction in a film designed for children, but have decided on general grounds to attempt to influence the attitude of children towards the care of their teeth and have agreed that the new film should be designed with this latter object in view.

Summaries of scripts have been produced by members of the Sub-Committee and others and the services of a producer and script writer have been obtained to advise on production generally. These services will cost £150 and this will also include proposals for supporting filmstrips.

Owing to the need for stringent economy in public expenditure it will not now be possible for the Central Office of Information to include a film on dental health in their programme for 1951-52.

Since the Committee's last report in November, 1950, new material has been produced. This includes a chart in seven colours showing the structure of a tooth, a new folder showing the proper way to clean teeth, and a replacement for *The Story of a Tooth*. From estimates recently submitted the effect of increases in wages and the price of paper has been

approximately to double printing costs over the past twelve months. This tendency, if it is maintained, must have a serious effect on the Board's programme of dental health education.

Applications for material have been steadily rising over the past two years. During 1950 an average of 100 per month were received. In the twelve months ended Dec. 31 last there were issued 50,000 copies of the booklet *Twenty Questions* and 85,000 copies of the folder *The Story of a Tooth*.

EDUCATIONAL GRANTS

Educational Films.—The Committee have considered a further progress report from the Advisory Committee on Visual Education in Dentistry under the chairmanship of Professor W. E. Herbert.

They report that the task of viewing and appraising films which might be suitable for copying in accordance with the terms of the Board's resolutions in May, 1950, is continuing and already copies of the following films are available for distribution:—

"Dental Amalgam Failure"

"Gold Inlay Technique"

"Silicate Cement"

"Technique of Arch Wiring for Fractured Jaws"

"Construction of Cap Splints"

"Eyelet Wiring"

"Crush Fracture of the Middle Third of Face"

"Surgical Wiring"

"Treatment of a Mandibular Fracture"

"Limited Alveolectomy and Frænoplasty"

"Radical Operative Treatment of Parodontal Pyorrhœa"

"Surgical Treatment of Pyorrhœa Alveolaris"

"Full Denture Construction"

In addition, two films, "Anæsthesia in the Dental Chair (Adults)" and "Anæsthesia in the Dental Chair (Children)", have been presented to the library by Imperial Chemical Industries Ltd.

It is expected that within the next three months forty-two films embracing Acrylics, Conservative Dentistry, Maxillo-facial and Oral Surgery, Oral Hygiene (Scaling, etc.), Orthodontics, Parodontics and Prosthetics will have become available for distribution and the Advisory Committee plan to have a

catalogue of these films available before the end of the year.

The total outlay will probably be less than £1000 out of the sum of £1500 granted by the Board for this purpose in May, 1950.

It is gratifying to note that the facilities for hiring films selected by the Advisory Committee are gradually becoming more widely known and to judge by the demand from dental teaching schools, dental students' societies, and local study groups of practitioners in the first three months of this year, the Board's policy of making a charge for the hire of films, which will not only cover the cost of distribution but also build a small fund for replacements, appears to be fully justified.

The Committee would again like to place on record their appreciation of the continued efforts of the members of the Advisory Committee which will doubtless prove of lasting benefit to all sections connected with dental teaching.

SOCIETY NOTES

THE SOCIETY OF DENTAL ANÆSTHETISTS (London and Southern Counties Branch)

SYLLABUS 1951-52

ALL meetings will be held at the Eastman Dental Hospital, Gray's Inn Road, London, W.C.1, at 7.30 p.m.

Thursday, Sept. 13, 1951.—

"Anæsthesia in Its Relation to the Heart".

Dr. N. D. McCreath, M.R.C.P., M.A.R.C.P.

Thursday, Oct. 11, 1951.—

"Recent Clinical Advances in Anæsthesia".

Dr. W. H. Myers, M.R.C.S., L.R.C.P.

Thursday, Nov. 8, 1951.—

"Members Exchange of Ideas". Mr. V. McMunn.

Thursday, Dec. 13, 1951.—

"General Anæsthesia in Oral Surgery".

Dr. G. Organe, M.D., D.A.

Thursday, Jan. 10, 1952.—

"Orthodontics and the General Practitioner". Mr. J. H. Hovell, F.D.S., M.R.C.S. L.R.C.P.

Thursday, Feb. 14, 1952.—

"Films of Dental Interest". Dr. H. R. Mandiwall, L.D.S. R.C.S. Eng., M.B., B.S.

Thursday, March 13, 1952.—

"Anæsthetic Emergencies". Dr. Eric Littler, M.R.C.S., L.R.C.P., D.A.

Non-members may obtain particulars regarding attendance from the Hon. Secretary, Reginald T. Ellison, 107, Brent Lane, Dartford, Kent.

NATIONAL HEALTH SERVICE NOTES

General Dental Services

CONDITIONS WITH RESPECT TO MATERIALS

The Minister of Health has given his approval to the use of Croform cobalt chromium alloy in the General Dental Services.

The Scale of Fees at present contains no specific fee for denture bases of Croform cobalt chromium alloy or similar alloys, and practitioners using such material should therefore submit claims under Item 24 of the Scale of Fees.

The Minister has also approved Portex Copol acrylic resin denture base for the purpose of general dental services.

MINISTRY OF NATIONAL INSURANCE

INCREASED NATIONAL INSURANCE CONTRIBUTIONS FROM OCT. 1

EMPLOYERS are reminded that the increased rate of contributions laid down in the National Insurance Act, 1946, comes into operation on Oct. 1. Stamps at the new rates will be available at post offices from Monday, Sept. 24.

The amount of the increase in the employed persons' (Class 1) rate is 4d. in the case of men and women over 18, and 2d. in the case of

boys and girls under that age; the increase is divided equally between the employer's and the employee's share. There are corresponding increases in the Class 2 and Class 3 rates.

A leaflet (N.I. 63) setting out the main rates can now be obtained at National Insurance Offices and will also be available at post offices from Sept. 1.

Tumours of the Jaw

Although mumps, impacted wisdom teeth and malignant disease produce swellings of the face, the author has confined his remarks to the problem of "abnormal productions derived from the dental formative organs".

The diagnosis of tumours of the jaw is essentially a combination of both clinical and

The epithelial cells of the enamel organ, if inhibited in any way, instead of forming the enamel part of the tooth, form a tumour called adamantinoma, which has to be differentiated from: (a) dental and dentigerous cysts, (b) localized fibrous dysplasia, (c) benign giant-cell tumour, (d) central fibroma of bone, (e) central myxoma of bone, (f) simple cyst of bone, (g) sarcoma.

The adamantinoma is found at an average age of 35 years. The mandible is affected in approximately 85 per cent of cases and first comes under observation as a painless swelling on the facial aspect of the jaw, gradually increasing in size over a period of many months or years.

It is difficult to diagnose adamantinoma from a dentigerous cyst in a radiograph, but if the unerupted tooth from which the cyst has arisen is present with its roots anchored in normal bone, and if the patient is a young individual, a diagnosis of a dentigerous cyst can be made. It is unusual for a dental cyst to break out beyond its bony walls. If the infected root responsible for a cyst is present together with destruction of some part of lamina dura about the tooth, it is likely to be a dental cyst.

Localized fibrous dysplasia causes a swelling of the mandible in young and occasionally in older people. The bone is replaced by a substance casting a granular shadow, the cortex is apparently expanded from without and only one side of the bone is involved.

The benign giant-cell tumour in the mandible is distinguished by the following

ABSTRACTS

from Other Journals

radiological examinations. The author, to substantiate this, describes two cases, one a complex composite odontome and the other a case in the border-land of the undefined in teratology. As the mandible is considered to be the unique bone, the salient features of its special embryology are enumerated:—

1. The mandible is formed from membrane and in its anterior part from cartilage.

2. The teeth are derived from both ectoderm and mesoderm.

3. The ameloblasts—forming enamel—are derived from the epithelial cells of the ectoderm.

4. The odontoblasts—forming dentine—are mesodermal in origin.

5. The dental pulp is formed from the mesodermal papilla.

This knowledge of the embryology of the tooth and the jaw helps considerably in radiological diagnosis of the tumours of the jaw.

points: (1) age—under 30, usually under 20; (2) the bony margins of the growth are ill defined; (3) The site of occurrence is usually anterior to the first permanent molar tooth.

The central fibroma—when occurring in the angle region—is too well defined anteriorly to be mistaken for an adamantinoma.

The central myxoma presents itself as an area of bone destruction with fairly well defined margins, in the centre of which are fine strands of bone, finer than those found in an adamantinoma or benign giant-cell tumour. —CAMPBELL, W. (1951), *J. Fac. Radiologists*, 2, 272.

The Cast Gold Inlay

The modern method of casting gold inlays has only been arrived at after considerable research over a period of fifty years, and even now Professor Hollenback states that at this time the apparent expansion compensation is greatly in excess of gold shrinkage, and therefore it must be assumed that it is not fully effective and that still more research is needed. However, the technique described by the writer gives results that few men have attained.

The article, after reviewing the history of the gold inlay, gives a detailed account of the various expansions of materials and the shrinkage of gold used in dentistry. The figure for the linear casting shrinkage of pure gold has been determined by Hollenback and Skinner to be 1.6 per cent, but there is a considerable difference between the shrinkage of pure gold and dental gold alloys. The casting shrinkage of each type of gold used should be known, and the appropriate expansion allowed for in the investing material. The material used for investing and casting must expand enough to compensate for this shrinkage. Many factors vary this expansion, such as the water-powder ratio, type of spatulation (mechanical or hand), method of investment (vacuumatic, etc.), and thermal as against hygroscopic expansion. The method used by the practitioner must be standardized and all factors balanced if perfect inlays are the ideal.

The six steps involved in making an inlay are discussed individually, and it is stressed

that each step is of equal importance. The writer maintains, and proves by his work, that the wax pattern should be invested under vacuum, and expansion obtained by a hygroscopic material. An air-pressure casting machine is preferred to the more usual centrifugal.

Perfect inlays are illustrated in the article, and before seating are etched by *aqua regia* to make sufficient space for the cement.—HOLLENBACK, G. M. (1951), *Inter. dent. J.*, 1, No. 3, 67.

An Evaluation of the Effect of Dental Foci of Infection on Health

The whole of this issue of the *Journal of the American Dental Association* is devoted to a report prepared at the University of Michigan by twelve eminent men in the medical and dental professions, under the direction of Kenneth A. Easlick. It is a critical appraisal and accurately documented report of all the evidence concerning the question of dental foci of infection. To the dentist and the patient it is an extremely important subject, and there is still much confusion in the minds of the profession with regard to the dental condition in relation to the general health of the patient.

The report is divided into six sections dealing with research findings, which are in turn divided into fifty-nine subdivisions. The whole range of dental foci of infection in relation to general health is carefully studied from every aspect. The chapter on diagnosis of focal infection from non-vital or diseased vital teeth should be read by everyone who has ever done a root canal filling.

A new approach to the subject which may lead to a better understanding of the conditions of focal infection is suggested in the use of ACTH and cortisone in medical and dental research. The final chapter deals with the interesting summaries of opinions about the importance of focal infection in systemic disease. In the light of modern knowledge the complete acceptance of the theory of dental foci of infection cannot be justified in every case, for even after forty years of this theory there is still no proof of its existence. This

does not mean that areas of infection should not be removed as and when necessary, but it does mean that the age when every symptomless foci is removed in the wild hope that all ills will be cured is gone. The report gives a balanced rational view of dental foci of infection which should help the dentist and his patient in general practice.—*J. Amer. Dent. Ass.* (1951), 42, 617-697.

Comfort and Chewing Efficiency in Dentures

A report is made on the effect on masticatory efficiency of certain variations of occlusal surfaces of artificial teeth. The method described by Thompson (*Dental Cosmos*, Feb., 1937) was employed, in which a comparison is made of the weights of the screened residues of a standard bolus. Stoning the lower right lingual cusps out of functional occlusion caused a loss of efficiency of 16 per cent, a loss of 32 per cent following their complete removal. Removal of upper buccal cusps

resulted in a loss of 15 per cent. The replacement of porcelain by acrylic teeth caused a reduction of efficiency between 26 per cent and 33 per cent. By the use of gold veneered occlusal surfaces on acrylic teeth, their efficiency was restored to that of porcelain teeth, while preserving the reduced impact shock characteristic of plastic, and eliminating wear.

In these tests the constant factors were as far as possible identical in the various dentures, and the occlusion carefully balanced before making the test modification.

The use of metal for the fitting surfaces of full dentures is recommended, and the use of impression wax to secure a functional relining of the lower denture. The denture is worn for a week after the first insertion, the wax is then applied to the fitting surface and after the denture is worn thus for a few hours, a metal liner is cast and the relining completed by the injection method.—SCHULTZ, A. W. (1951), *J. Prosthetic. Dent.*, 1, 38.

BOOK REVIEW

THE PORCELAIN JACKET CROWN. A

Manual stressing the Preparation of Normal and Abnormal Teeth. By S. CHARLES BRECKER, D.D.S., New York. $6\frac{3}{4} \times 9\frac{3}{4}$ in. Pp. 263, with 290 illustrations and frontispiece in colour. 1951. London: Kimpton. 50s. THE author states in his Preface that in his experience the primary weakness in porcelain jacket crown construction is in the preparation of the tooth. This book deals with the preparation of teeth for jacket crowns, and after reading the title it is a little disappointing to find no mention of how to make the crown in porcelain. The author has purposely left this side out, but it is to be hoped that one day he will rectify this omission and produce a companion volume.

The book reduces to a fine art the preparation of a tooth for a jacket crown. Each tooth is taken separately, and discussed with the liberal use of good illustrations. In the past most text-books on operative procedures have shown the ideal jacket crown preparation on the ideal tooth, but this is rare in practice,

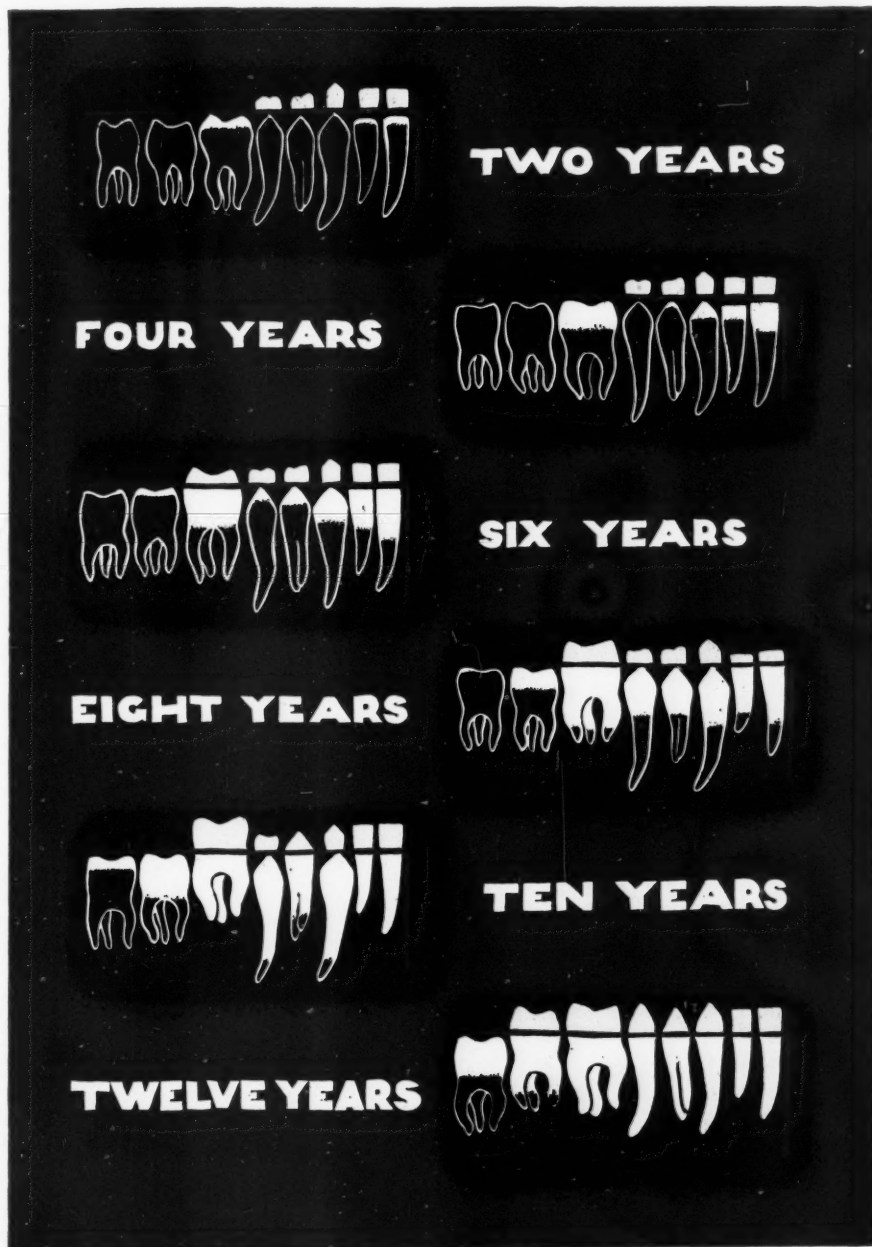
and many text-books fail in their usefulness because of this outlook. The author overcomes this tendency by showing each tooth and its abundant possible irregularities, and the individual preparation for each type. All the methods given are sound and practical. Fortunately there is no mention of the impractical and largely impossible method of removing the labial enamel by cutting it into small squares and chiselling it away, and the fallacy of the chevron method is clearly illustrated.

The main part of the book concentrates on the preparation of the tooth, but it ranges over the whole question of anatomy, condition, position, and the complicated shading and tinting of the crown. A final chapter deals with porcelain bridges. To anyone interested in jacket crowns this book is essential; it is well produced, with a host of illustrations showing the instruments in use, and a diagram accompanies many photographs. It is a book for the average general practitioner, as well as the student and post-graduate, and may be highly recommended.

N. L. W.

COLOURED CHART No. 7. (FOR YOUR PATIENT'S INSTRUCTION)

ERUPTION AND DEVELOPMENT OF TEETH



The above illustrations represent diagrammatically eruption and development of teeth between the ages of two and twelve years. The black areas in the teeth show the undeveloped portion; the white shows the developed structure, and the yellow shows erupted deciduous and permanent teeth.

OFFICIAL SUPPLEMENT OF THE
**SURGICAL INSTRUMENT MANUFACTURERS'
ASSOCIATION (INC.)**
DENTAL LABORATORIES SECTION

Chairman : E. G. EMMETT, F.I.B.S.T.

Administrative Offices : 6, HOLBORN VIADUCT, LONDON, E.C.1

Telephone: CITY 6031

No. 6

September, 1951

Editorial Committee: MR. C. M. BOOTH; MR. H. J. POTTER, F.I.B.S.T.

EDITORIAL

THE success of the One-day Conference sponsored by the London Regional Branch as a contribution to mark the Festival of Britain, will have been shared by many of our readers. Let us here congratulate the organizers and leave you to look on other pages for the story.

When this issue reaches you, it is more than probable that your annual holiday will be something of the past, and it is hoped that you will have experienced considerable recreation as a result; at any rate for a brief spell you will have been able to devote the whole of your time to your family—a heritage not yet taxable.

Members will be gratified to learn that the Conference proposed by the British Standards Institution has now taken place, and we are informed that a representation of dental manufacturers, professional organizations, and

interested government departments acclaimed the setting up of a committee to deal with the Specifications of Dental Materials. It is most pleasing to note that attention was drawn to the need for "something more" than a "minimum specification" for dental materials. Our representative, strongly supported by a very eminent and learned member of the profession, pressed for a "specification of technique", it being felt, quite rightly, that the right material is useless *without* the right technique.

If this project is successful, the profession may well be proud of its achievement, for we believe that although Australia and America can each boast a Bureau of Standards for dental materials, this country will be the first to combine a standard for both materials and techniques. Our members will be eager for future developments.

LONDON REGIONAL BRANCH'S ONE-DAY CONFERENCE

ON Saturday, July 7, the London Regional Branch acted as hosts to the rest of the Dental Laboratories Section by organizing a "Business Methods" meeting at the Holborn Restaurant. Held as a contribution to the Festival of Britain, this was the first time a meeting of this kind has been attempted; in the past all efforts have been devoted to meetings of a craft or technical nature. The support accorded to the meeting was not perhaps in keeping with Committee's hopes, but the attendance and enthusiasm of members

from the provinces was more than compensation for the hard work involved. Manchester was well supported by their stalwart Mr. George Kenyon and party. Cardiff of course had its contingent, with Mr. R. Mather and Mr. Merrifield well to the fore. Croydon were relied on to be in attendance and were ably led by their secretary Mr. Nowers and by Mr. D. M. Beauchamp. Members of the proposed South-Western Counties Branch were particularly welcome and with Mr. Bricknell, of Exeter, had travelled from as far away as

Plymouth and Tavistock to be present. This goodly muster of provincial members together with the London enthusiasts brought the attendance up to a worthwhile effort.

The deliberations of the afternoon were preceded by a most enjoyable get-together in the morning, and, at the informal luncheon party which followed, the conversation which took place was almost a "Business Methods" meeting in itself.

The meeting proper was opened at 2.30 p.m. by the President, Mr. E. G. Emmett, who

wholly in accord with Mr. Mather's figures and his line of approach to this subject.

Mr. Potter, in summing up, said that he felt all those present must have gained materially by listening to such an absorbing subject so well presented, and that if only all Laboratory Owners had been present it might stop foolish price-fixing based on cutting a competitor's charges without due consideration of all the principles involved.

After an interval for tea Mr. F. E. Martin of London introduced Mr. C. M. Booth, who



Mr. Mather lecturing on "Costing".

welcomed those attending and expressed the delight the London Regional Branch felt in trying to open up a new line of activity and said he felt sure that those who had travelled so far would be well rewarded for their efforts.

Mr. H. J. Potter, of Luton, acting as chairman for the first session, then introduced the first lecturer of the afternoon, Mr. Raymond Mather, head of the Minerva Laboratories of Cardiff, and said that the subject "Costing" was one about which Mr. Mather was well qualified to instruct, as the ramifications of his own organization with its several self-supporting departments, were testimony to his ability and knowledge of the subject.

The study of "man hours", averages, and those mysterious "overheads" which are so often overlooked, was very intriguing and enlightening. The very interesting debate that ensued showed that the subject had been followed with great keenness, and demonstrated that other Laboratory Owners who also did their costing on a scientific basis were



Mr. Booth lecturing on "Laboratory Organization".

was due to give a lecture on "Laboratory Organization". In doing so Mr. Martin said that Mr. Booth's interest in the craft was well known by his various activities, and he would be remembered especially for his successful efforts in organizing London's Table Demonstration, which was the culmination of the Annual Conference held earlier in the year.

Mr. Booth urged Laboratory Owners to adopt a more businesslike outlook, as technical skill alone is not sufficient to sustain a business, and that personal contact with clients is essential at all times. The need for safeguarding a Laboratory's good name by using good materials was stressed, as all-enduring success can be built only on a sure foundation, and quality of materials and labour is the sure foundation of achievement. A number of malpractices among Laboratories were exposed and members were told "do not be afraid to lose business if you cannot get and hold it by fair means". A lively discussion followed, after which in summing up, Mr. Martin reiterated a number of the points made by the speaker.

Mr. Emmett, the President, in concluding the afternoon's business, paid tribute to the organizers of such a good meeting, and thanked the lecturers for their good advice and also Miss Sawers for her attendance to record the proceedings. Members will be pleased to know that it is intended to publish the papers given by Messrs. Mather and Booth in subsequent issues of the supplement.

The work of the day terminated in a lighter mood, with a dinner presided over by Mr. Emmett and at which Mr. Booth filled his customary role as toastmaster. By devious toasts the President was able to take wine with

all the various parties and guests present. Mr. Mather proposed the toast of the President and said how, for a number of years, he had urged Mr. Emmett to accept the chairmanship of the D.L.S. and at last, now that he had done so, we are able to see the benefits of his guidance. Mr. Emmett made a suitable reply. During the evening, entertainment was provided by Miss Eileen Cusack (soprano) with Mr. Frederick Arthur at the piano.

A memorable day came all too quickly to an end, but some of the London members remained to bid the provincial members farewell on their journey home.

NEWS FROM HEAD OFFICE

A meeting of the Main Committee was held at 6, Holborn Viaduct, London, E.C.1, on Friday, July 6.

The Chairman in his opening remarks expressed regrets at the absence of representatives from three Branches, and made the point that at each meeting of the Main Committee each Branch *should* be fully represented, and suggested that, when necessary, deputies should take the places of those unable to attend.

The following were some of the items discussed.

Abolition of Grade III.—The Committee is of opinion that in the event of the abolition of Grade III, laboratory owners should still be in a position to employ laboratory hands who would, however, be outside any grade of dental technicians. Clarification is being sought on this issue and it has been recommended to the N.J.C. that if it is decided to abolish Grade III, this should not become effective for two or three years.

Wages Application.—The Trade Unions are maintaining their application for increases in the minimum wages and the matter is under consideration by the Employers' side, whose decision will be communicated to the N.J.C. at the next meeting. In the meantime the Unions are requesting that any increase granted should have retrospective effect.

Wages during Sickness.—The Employers' Side of the N.J.C. have suggested an amendment of the "payment during sickness" clause providing for a reduction of sick pay by half the amount of any sickness benefit paid to the employee under the National Insurance Scheme. At present no deductions can be made unless stipulated in the employee's contract of service.

Ratio of Apprentices.—While appreciating the necessity for some regulation of the entry of apprentices into the Craft, the Committee do not favour any alteration of the existing ratio or an absolute ban on the further employment of apprentices. As, however, there is at present a substantial number of unemployed apprentices, members wishing to take on apprentices are strongly advised to utilize the services of those with uncompleted indentures and thus enable them to finish their training.

Representation of S.I.M.A. on N.J.C.—Notice of motion to increase the representation of the S.I.M.A. on the N.J.C. to two representatives has been given to the Council and we understand that this will have the support of the Employers' Side when the matter comes before the N.J.C. at its next meeting.

Co-operation with the B.D.A.—Efforts made by the Committee have led to discussions between the B.D.A. and the S.I.M.A. with a view to securing a closer liaison between the

two organizations on matters of mutual interest and the B.D.A. representatives have agreed to recommend this in principle to their Council.

Fair List of Laboratories.—Distribution of the first issue of the Fair List of Laboratories has now been completed and in view of substantial applications from local Dental Committees there is likelihood of an early reprint. Members desiring any alterations in their names and addresses, as already printed, are asked to advise Head Office without delay.

Chrome Cobalt Alloys.—The Ministry of Health has approved Croform and Svedion chrome cobalt alloys for use in connexion with the fabrication of dentures under the general dental services. Members are again urged not to enter into agreements concerning these metals without communicating with our legal department.

Standardization of Dental Materials.—Representatives of the Association attended a Conference arranged by the British Standards Institution on July 19 to discuss the question of the standardization of dental materials and the desirability of establishing a Committee to deal with the project. A number of interested government bodies and other organizations were also represented and the desirability of

formulating standard specifications received unanimous approval.

Branch Rules and Constitution.—Model Rules and Constitution for Branches have now been approved by the Committee and copies have been distributed to the Branches for their guidance.

Applications for Membership.—

The following applicants for membership have been recommended to the Council for election as members:

FULL MEMBER

Affiliated Member transferred to Full Membership

Wallace Pearson, 17 High Ousegate, York.

AFFILIATED MEMBER

A. S. Brown, 3 Conway Road, Leicester.

Changes of Address.—The following members can now be located at the undermentioned addresses:

E. Cundiff, 7 Blossom Street, Chorlton-on-Medlock, Manchester, 13.

Douglas Ducat, 71 Scott Street, Dundee.

W. Geo. Kenyon, 764 Stockport Road, Longsight, Manchester, 13.

A. J. Reakes, 9 Wolseley Crescent, Edinburgh, 8.

CORRESPONDENCE

Members will be interested to read the following correspondence:—

S.I.M.A., DENTAL LABORATORIES SECTION,
6, HOLBORN VIADUCT, LONDON, E.C.1.
July 3, 1951.

J. W. Vincent Ash, Esq.,
Messrs. Claudius Ash, Sons & Co. Ltd.,
26/40, Broadwick Street, London, W.1.
Dear Sir,

A number of our members have complained regarding the lack of service in connexion with the marketing of "Peridon" teeth. We are particularly concerned with the following facts:—

1. That the "Peridon" shades are not true to the New Hue Shade Guide and we suggest that a "Peridon" Guide should have been produced at the time the teeth were marketed.

2. That the supplies of the darker shades are inadequate and also vary greatly.

3. That there are no Acrylic Posteriors to match and that even the 20° Porcelain Posteriors recommended are not available.

4. That a "replacement" service was announced upon the release of "Peridon" teeth in May but this has not in fact been available.

Our Association in making these points, do so with helpful intentions and in the hope that your co-operation will enable us to give a complete service to our respective clients, and that the irritating embarrassment we are experiencing will be removed in the very near future.

Yours faithfully,
E. G. EMMETT, Chairman.

CLAUDIUS ASH, SONS & CO. LTD.,
26/40 BROADWICK STREET,
LONDON, W.1.

July 6, 1951.

E. G. Emmett, Esq., F.I.B.S.T.,
The S.I.M.A. (Inc.),
6 Holborn Viaduct,
London, E.C.1.
Dear Sir,

I am most appreciative of your very helpful letter of the 3rd inst. on the subject of "Peridon" teeth, and will reply to each point raised in the order appearing in your letter:—

1. Your point is fully appreciated, and a "Peridon" Shade Guide is being produced as speedily as possible.

2. The demand for the darker colours is far in excess of ratio which governed initial production despite a careful analysis of the sales value of each shade computed from our record of past sales of New Hue Teeth.

Production is well forward at the factory, with a view to making increased supplies of these darker shades available at an early date.

3. Production of "Peridon" posterior teeth is already scheduled, and they will be introduced to the market as quickly as developments will allow. Meantime, every effort is

made by us to provide alternative makes as near as possible by way of a matching service, and to make available an adequate supply of 20° Porcelain Posteriors commensurate with the demand. Here again, the exceptional demand for darker colours has created a temporary shortage.

4. The "replacement" or "rematching" service is in process of development, and it is a matter of much concern to us that a full service in this respect is not yet possible. The assurance is given, however, that in due course any broken sets accumulated in the meantime will be satisfactorily rematched.

May I say at once that as the leading service house for Amalco products, we are most conscious of the difficulties and embarrassment caused our valued customers by these shortcomings, and are doing everything possible with the factory's fullest co-operation, to bring to fruition a full service with Peridon teeth at the earliest opportunity.

I do hope that my reply will give you the reassurances sought, and in the meantime we will do our utmost to meet your difficulties as they may arise from time to time.

Yours faithfully,

J. W. VINCENT ASH.

NEWS FROM THE BRANCHES

North-Eastern Branch Report.—A feature of the quarterly meeting of the Branch held at York on Saturday, July 14, 1951, was a very pleasant reunion with some of our North-Western friends. Unfortunately only four were able to visit us, but they were none the less welcome, and as the weather was poor the suggested river trip was omitted.

At the meeting were nineteen members and five visitors, presided over by Mr. H. Featherstone. We were pleased to note that some of our suggestions from the April meeting had met with favour at Headquarters, viz: The new application form, the necessity for a prospective member to appear in person at the meeting at which his application is discussed, and the continuance of a grant to Branches. It was proposed that all Dental Students and

hospital employees should be prevented from undertaking work in their spare time at ridiculously low prices, and pointed out that the Unions should be interested as the practice is keeping technicians out of work.

Other matters discussed were:

1. The Union desire to abolish Grade III.
2. N.H.I. sick pay deductions from wages.
3. That all members of S.I.M.A. should receive a new N.J.C. rule book as issued in 1943.
4. The proposed ban on apprentices entering the profession for two years.

After the business of the meeting was finished we had a practical demonstration by our Chairman on "The Construction of a Fixed Orthodontic Appliance". This was very enjoyable, as we gathered round him and his spot welder, listened to his expert advice,

examined his many examples, and fired questions at him. At 5.45 p.m. we went our various ways to Newcastle, Sheffield, Hull and Lancashire, having spent a most enjoyable day.

West of Scotland Branch.—At a luncheon held at the Grand Hotel, Glasgow, on July 3, members presented Mr. R. R. Marshall with a Ronson table lighter to mark his fifty years in dentistry.

ITEMS OF INTEREST

It is with much pleasure that we are able to report the establishment of a course for

apprentices in Bedfordshire and district in preparation for the City and Guilds of London Institute Examinations. The course will be at the North Bedfordshire College of Further Education, commencing on September 17, 1951.

City and Guilds of London Institute Examinations for Dental Technicians

At the recent examinations the following successes were obtained by students of Newton Heath Technical College: *Final*, Second-class pass, 2; *Intermediate*, First-class pass, 1, Second-class pass, 29.

IS THIS WHAT YOU ARE LOOKING FOR?

Each month we have featured an item of equipment or a material which it was thought may be just what you have been looking for. We are delighted to find that in many cases this has proved to be true, our suggestions have been well received, and from "information received" we understand that in a number of Laboratories some production difficulties have been removed and certain long-standing irritations no longer exist. We are happy to know that as a result of the fact that a number of our readers have acted on our advice and installed one or more of these featured items, more work is being more profitably produced and, what is even more important, to a higher standard.

With this month's issue we complete our first half year. The supplement has been well

received and we are encouraged to think that it is in itself one of the things you have been looking for.

May we now express our thanks to all those who have aided our efforts, and who by their individual efforts have contributed to such success as we have had.

So that we may know if we are in fact working on the right lines, we now ask you personally to write and express your opinion of the supplement, and to indicate to us if it is indeed something which you look for each month. Unless we hear from you we cannot know if your problems are being answered, and would point out that if we do not hear from you sometimes, the supplement will develop into a reflection of the Editor's opinions, and this is most earnestly to be avoided!

S.I.M.A. (DENTAL LABORATORIES SECTION) DIARY

Croydon Branch (Secretary: Mr. H. J. Nowers, F.I.B.S.T., 86, Beddington Road, Croydon).—Meeting, September 28, at the Six Bells, Handcroft Road, Croydon.

Liverpool and District Branch (Secretary: Mr. E. Flitcroft, 353, Lord Street, Southport, Lancs.).—Meeting, September 21, at 78, Mount Pleasant, Liverpool 3, 7.30 p.m. Rendering of Dental Brains Trust recorded at Caxton Hall, London, on June 19, 1951. Dental Surgeons and their staffs will be welcome. Tickets may be obtained from the Secretary.

North-Eastern Branch (Secretary: Mr. F. Pearson, 100, Morley Street, Bradford).—Meeting, September 29, 1951, at the White Swan Hotel, York, 2 p.m. Luncheon, 12.45.

London Regional Branch (Secretary: Mr. R. Foale, 899, Finchley Road, N.W. 11.).—Quarterly Meeting, October 4, at 6, Holborn Viaduct, E.C.1, at 6.30 p.m.

Main Committee Meeting.—October 4, at 6, Holborn Viaduct, E.C.1, at 10.30 a.m.

S.I.M.A. Annual General Meeting.—October 12, followed by Annual Dinner and Dance.